IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Duan, et al.
Serial No.:	10/615,885
Filing Date:	July 8, 2003
Group Art Unit:	2624
Confirmation No.:	9839
Examiner:	Daniel G. Mariam
Title:	*Hierarchical Determination of Feature Relevancy*

Mail Stop - AF
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

PRE-APPEAL BRIEF REQUEST FOR REVIEW

The following Pre-Appeal Brief Request for Review ("Request") is being filed in accordance with the provisions set forth in the Official Gazette Notice of July 12, 2005 ("OG Notice"). Pursuant to the OG Notice, this Request is being filed concurrently with a Notice of Appeal. Applicants respectfully request reconsideration of the Application in light of the remarks set forth below.

REMARKS

Applicants seek review of the rejections of Claims 1-11, 13-14, 16-24, and 26-27. Applicants do not seek review in this Request of the rejection of Claims 12, 15, 25, and 28. Applicants contend that the rejections of Claims 1-11, 13-14, 16-24, and 26-27 contain clear legal and factual deficiencies, as described below. Applicants request a finding that the rejections of Claims 1-11, 13-14, 16-24, and 26-27 are improper and that the claims are allowable.

Section 102 Rejections

Claims 1-2, 4-11, 13-14, 16-18, 20-24, and 26-27 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,865,582 to Obradovic et al. (*"Obradovic"*). Applicants respectfully traverse these rejections.

Claim 1 is directed to a method for feature selection based on hierarchical local-region analysis of feature characteristics in a data set that includes partitioning a data space associated with a data set into a hierarchy of pluralities of local regions. The method also includes evaluating a relationship measure for each local region using a metric based on similarity between input features and a selected output. The method further includes identifying one or more relevant features by using the relationship measure for each local region. *Obradovic* does not disclose each of these limitations.

The Final Office Action mailed April 18, 2007 (the "Final Office Action") relies on three derived subsets—a training subset, a validation subset, and a test subset—of *Obradovic* to teach pluralities of local regions of Claim 1. *See Final Office Action*, Page 5 (stating "pluralities of local regions, i.e., subregions, subsets, etc (col. 7, lines 42-52; col. 11, lines 1-36.")). Additionally, the Final Office Action relies on the passages at Col. 10, Lines 14-36, and Col. 11, Lines 1-46 of *Obradovic* to teach evaluating a relationship measure <u>for each local region</u> using a metric based on similarity between input features and a selected output, and identifying one or more relevant features by using the relationship measure <u>for each local region</u>. *See Final Office Action*, Page 5. The passage at Col. 11, Lines 1-46 of *Obradovic*,

however, discloses describing the relationship between attributes and yield for <u>only the training field subset</u>:

> First, the data from all fields are analyzed in order to <u>define spatial regions having similar characteristics</u>. Then, regression models were built to describe the relationship between attributes and yield on the <u>training field subset of identified spatial regions</u>.

See Obradovic, Col. 11, Lines 32-36 (emphasis added).

In fact, not only is the description of the relationship between attributes and yield limited to only one subset of the three subsets relied upon by the Final Office Action, but this relationship description process is further restricted to only the training field subset of <u>previously identified</u> spatial regions. That is, *Obradovic* fails to disclose performing this relationship description process for the <u>validation subset</u> of all the spatial regions, the <u>test subset</u> of all the spatial regions, and <u>the training field subset of the unidentified spatial regions</u>—each of which the Final Office Action relies on to teach the pluralities of local regions of Claim 1. As a result, *Obradovic* fails to disclose, teach, or suggest the method for feature selection of Claim 1 including, for example, evaluating a relationship measure <u>for each local region</u> using a metric based on similarity between input features and a selected output, and identifying one or more relevant features by using the relationship measure <u>for each local region</u>. For at least this reason, Applicants submit that the rejection of Claim 1 is improper. As a result, Applicants respectfully request a finding that Claim 1 is allowable.

Claims 2 and 4-11 each depend, either directly or indirectly from Claim 1. Therefore, for at least the reasons discussed above with regard to Claim 1, Applicants respectfully submit that the rejections of Claims 2 and 4-11 are improper. As a result, Applicants respectfully request a finding that Claims 2 and 4-11 are allowable.

Similar to Claim 1, Claims 13-14, 16, and 26-27 include limitations related to evaluating a relationship measure for each local region using a metric based on similarity between input features and a selected output. For at least those reasons discussed above with regard to Claim 1, Applicants respectfully submit that *Obradovic* does not disclose each of these limitations, and further submit that the rejections of Claims 13-14, 16, and 26-27 are

improper. Therefore, Applicants respectfully request a finding that Claims 13-14, 16, and 26-27 are allowable.

Claims 17-18 and 20-24 each depend, either directly or indirectly from Claim 16. Therefore, for at least the reasons discussed above with regard to Claim 16, Applicants respectfully submit that the rejections of Claims 17-18 and 20-24 are improper. As a result, Applicants respectfully request a finding that Claims 17-18 and 20-24 are allowable.

Section 103 Rejections

Claims 3 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Obradovic* in view of "Hierarchical Discriminant Regression" by Hwang et al ("*Hwang*"). Applicants respectfully traverse these rejections.

Claim 3 depends from and incorporates all the elements of independent Claim 1. None of the cited portions of *Obradovic* or *Hwang*, alone or in combination, disclose, teach, or suggest each of these claim elements. As discussed above regarding Claim 1, *Obradovic* does not disclose, teach, or suggest evaluating a relationship measure for each local region using a metric based on similarity between input features and a selected output, and identifying one or more relevant features by using the relationship measure for each local region. *Hwang* does not cure this deficiency. For at least this reason, Applicants submit that the rejection of Claim 3 is improper. As a result, Applicants respectfully request a finding that Claim 3 is allowable.
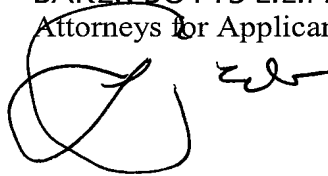
Similar to Claim 3, Claim 19 includes limitations related to evaluating a relationship measure for each local region using a metric based on similarity between input features and a selected output. For at least those reasons discussed above with regard to Claim 3, Applicants respectfully submit that the combination of *Obradovic* and *Hwang* does not disclose each of these limitations, and further submit that the rejection of Claim 19 is improper. Therefore, Applicants respectfully request a finding that Claim 19 is allowable.

CONCLUSION

As the rejections of Claims 1-11, 13-14, 16-24, and 26-27 contain clear deficiencies, Applicants respectfully request a finding of allowance of Claims 1-11, 13-14, 16-24, and 26-27. To the extent necessary, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,

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Date: July 18, 2007

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